

Statement Under Article 19(1)

Claims 1-2, 5, 9-10, 13, 15, 23-24, 27, and 37-38 have been amended. Claims 1-2, and 13 have been amended to remove references to the nucleic acid molecule of SEQ ID NO:1 or the polypeptide of SEQ ID NO:4, and to add claim language pertaining to particular regions of the amino acid sequences of SEQ ID NOs 12-14. Claims 15 and 27 have been amended to add claim language pertaining to particular regions of the amino acid sequences of SEQ ID NOs 15-16. Claims 9-10, 23-24, and 37-38 have been amended to simplify the language of the claims. The amendments are believed to be fully supported by the specification. In particular, the amendments to claims 1 and 13 relating to SEQ ID NOs 12-14 are supported by the disclosure at page 23, lines 8-17; and the amendments to claims 15 and 27 relating to SEQ ID NOs 15-16 are supported by the disclosure at page 23, lines 18-26.

Respectfully submitted



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Enclosures:

Replacement Sheets 71-74

What is claimed is:

1. An isolated SVPH nucleic acid molecule selected from the group consisting of:
  - (a) an isolated nucleic acid molecule comprising a DNA sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9;
  - (b) an isolated nucleic acid molecule encoding an amino acid sequence comprising the sequence selected from the group consisting of SEQ ID NO:12, SEQ ID NO:13, and SEQ ID NO:14;
  - (c) an isolated nucleic acid molecule encoding an amino acid sequence comprising a sequence selected from the group consisting of amino acids 1 through 15 of SEQ ID NO:12, amino acids 16 through 188 of SEQ ID NO:12, amino acids 189 through 388 of SEQ ID NO:12, amino acids 389 through 491 of SEQ ID NO:12, amino acids 492 through 675 of SEQ ID NO:12, amino acids 676 through 698 of SEQ ID NO:12, amino acids 699 through 766 of SEQ ID NO:12, amino acids 699 through 787 of SEQ ID NO:13, and amino acids 699 through 820 of SEQ ID NO:14;
  - (d) an isolated nucleic acid molecule that comprises at least about 17 contiguous nucleotides and that hybridizes to either strand of a denatured, double-stranded DNA comprising a nucleic acid sequence of (c) under conditions of moderate stringency in 50% formamide and 6XSSC, at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1% SDS; and
  - (e) an isolated nucleic acid molecule degenerate from SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9 as a result of the genetic code.
2. The nucleic acid molecule of claim 1 selected from the group consisting of SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.
3. A recombinant vector that directs the expression of the nucleic acid molecule of claim 1.
4. An isolated polypeptide encoded by the nucleic acid molecule of claim 1.
5. An isolated polypeptide according to claim 4 having a molecular weight selected from the group consisting of approximately 86,983; 89,459; and 92,781 Daltons as determined by SDS-PAGE.
6. An isolated polypeptide according to claim 4 in non-glycosylated form.
7. Isolated antibodies that bind to a polypeptide of claim 4.
8. Isolated antibodies according to claim 7, wherein the antibodies are monoclonal antibodies.
9. A host cell comprising the vector of claim 3.

11. The method of claim 10, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and animal cells.
12. The method of claim 10, wherein the host cell is a mammalian cell.
13. An isolated metalloproteinase-disintegrin polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, amino acids 1 through 15 of SEQ ID NO:12, amino acids 16 through 188 of SEQ ID NO:12, amino acids 189 through 388 of SEQ ID NO:12, amino acids 389 through 491 of SEQ ID NO:12, amino acids 492 through 675 of SEQ ID NO:12, amino acids 676 through 698 of SEQ ID NO:12, amino acids 699 through 766 of SEQ ID NO:12, amino acids 699 through 787 of SEQ ID NO:13, and amino acids 699 through 820 of SEQ ID NO:14.
14. An oligomer comprising a polypeptide of claim 4.
15. An isolated SVPH nucleic acid molecule selected from the group consisting of:
  - (a) an isolated nucleic acid molecule comprising a DNA sequence selected from the group consisting of SEQ ID NO:3, SEQ ID NO:10, and SEQ ID NO:11;
  - (b) an isolated nucleic acid molecule encoding an amino acid sequence comprising the sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:15, SEQ ID NO:16, amino acids 686 through 713 of SEQ ID NO:15, amino acids 714 through 790 of SEQ ID NO:15, and amino acids 714 through 781 of SEQ ID NO:16;
  - (c) an isolated nucleic acid molecule encoding an amino acid sequence comprising a sequence selected from the group consisting of amino acids 1 through 27 of SEQ ID NO:15, amino acids 28 through 193 of SEQ ID NO:15, amino acids 194 through 392 of SEQ ID NO:15, amino acids 393 through 493 of SEQ ID NO:15, amino acids 494 through 685 of SEQ ID NO:15;
  - (d) an isolated nucleic acid molecule that comprises at least about 17 contiguous nucleotides and that hybridizes to either strand of a denatured, double-stranded DNA comprising a nucleic acid sequence of (c) under conditions of moderate stringency in 50% formamide and 6XSSC, at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1% SDS; and
  - (e) an isolated nucleic acid molecule degenerate from SEQ ID NO:3, SEQ ID NO:10, and SEQ ID NO:11 as a result of the genetic code.
16. The nucleic acid molecule of claim 15 selected from the group consisting of SEQ ID NO:3, SEQ ID NO:10, and SEQ ID NO:11.
17. A recombinant vector that directs the expression of the nucleic acid molecule of claim 15.
18. An isolated polypeptide encoded by the nucleic acid molecule of claim 15.

20. An isolated polypeptide according to claim 18 in non-glycosylated form.
21. Isolated antibodies that bind to a polypeptide of claim 18.
22. Isolated antibodies according to claim 21, wherein the antibodies are monoclonal antibodies.
23. A host cell comprising the vector of claim 17.
24. A method for the production of a polypeptide according to claim 18 comprising culturing a host cell of claim 23 under conditions promoting expression.
25. The method of claim 24, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and animal cells.
26. The method of claim 24, wherein the host cell is a mammalian cell.
27. An isolated metalloproteinase-disintegrin polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:15, SEQ ID NO:16, amino acids 1 through 27 of SEQ ID NO:15, amino acids 28 through 193 of SEQ ID NO:15, amino acids 194 through 392 of SEQ ID NO:15, amino acids 393 through 493 of SEQ ID NO:15, amino acids 494 through 685 of SEQ ID NO:15, amino acids 686 through 713 of SEQ ID NO:15, amino acids 714 through 790 of SEQ ID NO:15, and amino acids 714 through 781 of SEQ ID NO:16.
28. An oligomer comprising a polypeptide of claim 18.
29. An isolated SVPH nucleic acid molecule selected from the group consisting of:
  - (a) the DNA sequence of SEQ ID NO:2;
  - (b) an isolated nucleic acid molecule encoding an amino acid sequence comprising the sequence of SEQ ID NO:5;
  - (c) an isolated nucleic acid molecule that hybridizes to either strand of a denatured, double-stranded DNA comprising the nucleic acid sequence of (a) or (b) under conditions of moderate stringency in 50% formamide and 6XSSC, at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1% SDS;
  - (d) an isolated nucleic acid molecule derived by *in vitro* mutagenesis from SEQ ID NO:2;
  - (e) an isolated nucleic acid molecule degenerate from SEQ ID NO:2 as a result of the genetic code; and
  - (f) an isolated nucleic acid molecule selected from the group consisting of human SVPH 3 DNA; an allelic variant of human SVPH 3 DNA; and a species homolog of SVPH 3 DNA.
30. The nucleic acid molecule of claim 29, wherein the DNA sequence comprises SEQ

32. An isolated polypeptide encoded by the nucleic acid molecule of claim 29.
33. An isolated polypeptide according to claim 32 having a molecular weight of approximately 13,938 Daltons as determined by SDS-PAGE.
34. An isolated polypeptide according to claim 32 in non-glycosylated form.
35. Isolated antibodies that bind to a polypeptide of claim 32.
36. Isolated antibodies according to claim 35, wherein the antibodies are monoclonal antibodies.
37. A host cell transfected or transduced with the vector of claim 31.
38. A method for the production of SVPH 3 polypeptide comprising culturing a host cell of claim 37 under conditions promoting expression, and recovering the polypeptide from the culture medium.
39. The method of claim 38, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and animal cells.
40. The method of claim 38, wherein the host cell is a mammalian cell.
41. An isolated polypeptide comprising an amino acid sequence of SEQ ID NO:5.
42. An oligomer comprising a polypeptide of claim 32.
43. The nucleic acid molecule of claim 1 selected from the group consisting of
  - (a) an isolated nucleic acid molecule derived by *in vitro* mutagenesis from SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9; and
  - (b) an isolated nucleic acid molecule selected from the group consisting of human SVPH 1 DNA; an allelic variant of human SVPH 1 DNA; and a species homolog of SVPH 1 DNA.
44. The nucleic acid molecule of claim 15 selected from the group consisting of
  - (a) an isolated nucleic acid molecule derived by *in vitro* mutagenesis from SEQ ID NO:3, SEQ ID NO:10, and SEQ ID NO:11; and
  - (b) an isolated nucleic acid molecule selected from the group consisting of human SVPH 4 DNA; an allelic variant of human SVPH 4 DNA; and a species homolog of SVPH 4 DNA.